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SELECTION FOR TRAINING, DO PRESENT PRACTICES MILITATE AGAINST OLDER WORKERS. PANEL AND WORKSHOP III.

BY- PALLONE, NATHANIEL J. AND OTHERS

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FOUR PAPERS WERE PRESENTED ON WORK DONE IN THE FIELD OF SELECTION OF OLDER WORKERS (OVER 45) FOR VOCATIONAL TRAINING. IN SOUTH BEND, INDIANA, A PROGRAM WAS DESIGNED FOR THE EDUCATIONAL REHABILITATION OF 100 HARD-CORE UNEMPLOYED WHOSE GATB SCORES DISQUALIFIED THEM FOR VOCATIONAL TRAINING. THE U.S. EMPLOYMENT SERVICE HAS UNDERTAKEN A PROGRAM OF RESEARCH ON THE APPLICABILITY OF APTITUDE TESTS FOR OLDER WORKERS, DEVELOPMENT OF APPROPRIATE TESTING TOOLS AND TECHNIQUES FOR EDUCATIONALLY DEFICIENT PERSONS, AND OF ACHIEVEMENT TESTS OF BASIC LITERACY SKILLS. IN WILLIAMSPORT, PENNSYLVANIA, A VOCATIONAL DIAGNOSIS PROGRAM TOOK INTO ACCOUNT PHYSICAL AND PSYCHOLOGICAL LIMITATIONS OF THE TRAINEES AND PROVIDED A JOB TRIAL SITUATION BEFORE A DECISION WAS MADE ON THE OCCUPATION TO BE SELECTED. IN THE UTAH EXPERIENCE, EFFORT HAS BEEN CONCENTRATED ON IDENTIFYING POTENTIALLY OBSOLETE WORKERS AND UPGRADING THEIR SKILLS BEFORE THEY BECOME UNEMPLOYED. AFTER DISCUSSION, AGREEMENT WAS REACHED THAT (1) TESTS SHOULD NOT BE DISCONTINUED, (2) THE HIGHEST DEGREE OF VALIDITY OF TESTS SHOULD BE ASSURED, (3) THE TRAINING PERIOD MAY BE A BETTER PREDICTOR OF SUCCESS ON THE JOB, (4) JOBS SHOULD BE PROVIDED AT DIFFERENT LEVELS, AND (5) THERE SHOULD BE MORE RESEARCH ON CULTURE-FREE TESTS. THESE PAPERS WERE PRESENTED AT THE NATIONAL CONFERENCE ON MANPOWER TRAINING AND THE OLDER WORKER, WASHINGTON, JANUARY 17-19, 1966. (PT)

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Page

Panelist:
WILLIAM ARAMONY, Director, United Community Funds of Dade County, Miami, Florida; former Director, United Community Service of St. Joseph County, Inc., South Bend, Ind., (Co-sponsor with The National Council on the Aging of Project ABLE), "The Worker Advisers Of Project ABLE, South Bend, Indiana." 86

Panelist:
HAYES M. HOWARD, [redacted] Agricultural and Industrial Institute, Nashville, Tennessee, "Mobile Recruitment," 95

General Workshop Discussion 99

III.

"Selection for Training -- Do Present Practices Militate Against Older Workers?"

Opening Remarks:
DR. MORRIS S. VITELES, Professor of Psychology, University of Pennsylvania, Chairman 121

Panelist:
DR. NATHANIEL J. PALLONE, Coordinator of Counseling Education, Graduate School, University of Notre Dame; Director, Project EDREHAB, South Bend Community Schools Corporation, South Bend, Indiana, "The Effects of an Educational Rehabilitation Program Upon Vocational and Mental Aptitude Test Performance of Hard-Core Unemployed Workers." 122

Panelist:
ROBERT C. DROEGE, Research Psychologist, Bureau of Occupational Test Development, United States Employment Service, U. S. Department of Labor, "Current Research in Test Development." 132

Panelist:
DR. KENNETH CARL, President, Williamsport Area Community College, Williamsport, Pa., "Vocational Diagnosis vs. Simple Testing Programs for Selection and Orientation of Training for Older Workers." 136

Panelist:
THEODORE MAUGHAN, Director, Utah State Employment Service, Department of Employment Security, Utah State Industrial Commission, "The Utah Experience," 141

General Workshop Discussion 144

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Panel and Workshop III

SELECTION FOR TRAINING - DO PRESENT PRACTICES MILITATE AGAINST OLDER WORKERS?

The panel was convened at 2:04 p.m., Monday, January 17, 1966, Dr. Morris S. Viteles, Professor of Psychology, University of Pennsylvania, presiding; Joseph Seiler, Manpower Development Specialist, Office of Manpower Planning, Evaluation and Reports, United States Department of Labor, as recorder, and Dr. Robert Droege, Research Psychologist, Bureau of Occupational Test Development, United States Employment Service, as resource consultant.

DR. VITELES: Having postponed the meeting from 1:30 to 2:00 o'clock, it seems to me that five minutes after 2:00 is not too late to begin.

The problem, as shown on the program, is Selection for Training -- Do Present Practices Militate Against Older Workers? I think that the spirit of the program and its ultimate purpose is well stated in a little note recently written by a man in South Africa, named Silverbauer, who is concerned in South Africa, in quite a different context, of course, but in essence with somewhat the same problems with which we are concerned here. And he made this very interesting observation:

"It is quite an achievement to assess men as they are, but we need to go much further and assess what they may become."

And this, I think, is a basic problem in our effort to take care of the older, especially the displaced older worker.

We start with a series of four papers, reports, on work that has been done in this field. Immediately after the completion of these reports we will have a workshop discussion which it is hoped will yield recommendations that can be applied in dealing with the problem at hand.

AC 001 334

Our first speaker is Dr. Nathaniel J. Pallone who is Coordinator of Counselor Education in the Department of Education, Graduate School, at the University of Notre Dame. As you might expect, he is an author and an educator and everything else that goes with being an academic man. But I think of interest today is the fact that, from December 1963 to June 1965, he served as Project Coordinator and Research Director for the South Bend project on the Educational Rehabilitation of the Hard Core Unemployed.

I have pleasure in presenting Dr. Pallone who will speak to the topic "The Effects of an Educational Rehabilitation Program Upon Vocational and Mental Aptitude Test Performance of Hard-Core Unemployed Workers." *

(Applause.)

DR. PALLONE: During 1962 and early 1963, an appreciable proportion of potential applicants for MDTA-sponsored vocational training programs operated by the South Bend (Indiana Community School Corporation were excluded from such programs on the basis of their sub-minimal scores on the General Aptitude Test Battery (GATB), virtually universally employed as a selection device in Federally-sponsored vocational training or retraining programs. Further, their test performances on the GATB-G ("General") scale, regarded as an IQ-equivalent, displayed levels of intelligence in the sub-normal or even in the "mentally retarded" (i.e., below 70) range. As a group, these workers were primarily, but not exclusively, among the hard-core unemployed.

Since their test performances seemed to indicate lack of ability to profit from vocational training or retraining, a pathway from economic superfluity to occupational stability via the acquisition of marketable skills seemed closed. However, the GATB essentially measures "developed" rather than pristine abilities, in much the same fashion that a scholastic aptitude instrument measures ability to profit from instruction at succeeding grade levels or in specific subject areas. For example, the high school student who has not, in his previous educational development, satisfactorily mastered the content of Algebra I is unlikely to be "ready to profit from instruction" in Algebra II regardless of the level of his pristine mental ability.

The GATB was designed to function as a measuring device among the mainstream of American workers, the majority of whom have completed some six to eight years of common or elementary schooling, and the GATB performs this function well. But it seems reasonable to conjecture that subjects markedly deficient in basic educational skills or even in years of exposure to common schooling or subject to cultural or linguistic handicaps will display in their GATB performances levels of "developed" abilities neither consonant with ability levels characteristic of the mainstream of American workers nor with the level of their own "pristine" but undeveloped mental ability. This observation applies especially to the Verbal and Numerical tests on the GATB, but it is likely that even success in assembly tasks may be influenced by deprivation in one's education experience, either directly or indirectly, as a function of increased confidence in one's ability to manipulate the objects in his environment. In any event, the results reported later tend

* See Appendix I, Note No. 1, pg. 671

to argue in that direction.

A number of workers whose performances disqualified them for entry into MDTA programs reported to Employment Service screening interviewers that they had never attended school; the majority of others reported that their educational experience had terminated below the sixth grade, and many had received whatever schooling they reported in segregated schools in the deep South.

The confluence of questions about the applicability or relevancy of the GATB as an appropriate selection device for this population and the demonstrably poor educational backgrounds of the workers in question led the Division of Adult and Vocational Education of the South Bend Community School Corporation to request the Office of Manpower, Automation, and Training to fund a quasi-experimental program designed to prepare hard-core unemployed workers to profit from vocational training by improving their basic educational skills. In December 1963, a contract was awarded for a demonstration and research project focussed on the educational rehabilitation of hard-core unemployed workers.

Under terms of this contract, a group of 100 hard-core unemployed workers whose GATB scores disqualified them from vocational training or retraining were to be enrolled for a period not to exceed thirty-six weeks in a pre-vocational program of educational skills improvement, focussed on verbal and mathematical or arithmetic skills. Only those workers diagnosed as mentally retarded on grounds other than GATB-G scores were to be excluded.

"Project Edrehab" was operationalized in February 1964 and terminated in October 1964. Previous reports (Jurkowski and Pallone, 1964; Pallone, 1965), published by and available from the South Bend Community School Corporation, have described the implementation of the project and attendant research results in detail. It is the purpose of this paper to report briefly the effects of an educational rehabilitation program upon the vocational and mental aptitude test performances of Project Edrehab enrollees.

Social-Vocational Characteristics

To situate the "typical" Project Edrehab trainee in an appropriate social context, it is necessary to review a few elements of social, educational, and vocational history. (Background characteristics have been reported in detail by Jurkowski and Pallone, 1964.) Thirty-eight percent of Edrehab enrollees were male Caucasians, forty percent male Negroes, and twenty-one percent female Negroes. Although three female Caucasians were enrolled, they were eliminated from research consideration in view of the likelihood of a typicality. A number of selected enrollee characteristics are tabulated in Table 1.

Table 1: Selected Social-Vocational Characteristics

Characteristic	Male Caucasian	Male Negro	Female Negro
Number	39	41	22
Proportion	38 %	40 %	21 %
Mean Age in Years	45.1	44.5	31.6
Years of Formal Education	7.5	7.6	9.1
Years in Labor Force	29.2	28.7	13.4
Years of Unemployment	5.0	6.3	2.2
Number of Jobs (TT) Held	7.9	14.5	3.9
Born in North Central States	83 %	12 %	24 %
Born in South Central States	7 %	70 %	53 %
Born in Gulf States	0 %	6 %	12 %
Years of Residence in S.B.	33.8	19.2	13.5
Left School to Support Parents	38 %	70 %	24 %
Left School to Support Self	24 %	3 %	24 %
No Reason to Continue School	24 %	15 %	6 %
Intercity Residence Changes	3.0	7.7	3.2
Educational Age (Stanford) GL	3.7	3.1	4.6
Mental Age (CTMM) GL	4.8	5.1	5.6
Educational Retardation (Months)	13	24	12

Legend: TT - Technical Term GL - Grade Level

Of particular interest to those concerned about manpower development of the over-45 or "older" worker are characteristics reported for male Caucasian and male Negro Edrehab enrollees, who reveal strikingly similar profiles while female Negro enrollees differ markedly.

Males of both races, on the average, could be regarded as members of the "older worker" group at the time of entry into Project Edrehab. As inspection of Table 1 indicates, they had completed, on the average, seven and one-half years of formal schooling, had spent some 29 years in the labor force, had experienced frequent job (as opposed to mere position) change, and revealed educational achievement levels equivalent to that of today's third-graders. However, the "typical" male Negro enrollee had experienced job change more often, roughly every eighteen months of his working life during periods of employment, and shows a demographic concentration in the Southern states. Male Caucasian enrollees, in contrast, had experienced job change only every thirty-six months of their working lives and originated primarily in the Northern states. Similarly, male Negro trainees had changed their city of residence much more frequently than their Caucasian counterparts and had come to live in the South Bend area much later in life.

The "typical" female Negro provides a number of similarities and contrasts. She is considerably younger than her male counterparts of either race and thus has spent less time in the labor force. She has also had more formal education and demonstrates a higher current level of educational achievement. She resembles the male Caucasian enrollee in that her job changes have occurred roughly every three years of her working life during periods of employment; she resembles the male Negro enrollee in demographic concentration.

The final three entries in Table 1---educational age, mental age, and educational retardation---demand special comment. An enrollee's educational age, expressed here in terms of grade level in years and months, was calculated from his performance on the subtests of the Stanford Achievement Test Battery. Scores on each subtest---reading, arithmetic, language usage, and spelling---were converted into grade level equivalents according to tables provided in the publisher's manual, summed, and meaned. The resulting mean was regarded as the subject's current educational age. Scores on the California Short-Form Test of Mental Maturity were similarly converted into grade level equivalents according to standard tables to provide an index of the subject's current mental age in terms comparable to those used to express his educational age. The calculation of the subject's index of educational retardation required simply the algebraic subtraction of his educational age from his mental age. If the resulting algebraic sum were accompanied by a positive sign, indicating that the subject's mental age <u>regardless of the absolute value of that age in IQ terms</u> exceeded his educational age, the subject was regarded as educationally retarded; if the resulting sum were accompanied by a negative sign, the subject was regarded as not educationally retarded, but <u>not</u> as necessarily mentally retarded. Interestingly, of the 178 hard-core unemployed workers whose GATB scores rendered them ineligible for vocational training referred for pre-enrollment testing to the Project Edrehab

staff, only four were found to be not educationally retarded.

Edrehab enrollees demonstrated educational ages ranging from a level typical of children who have completed one month in third grade to that of those who have completed six months in fourth grade, with corresponding educational retardation ranging from one to two years. Even though the mental capacity to profit from instruction in basic educational skills appeared, on the basis of these results, to be quite limited, it was the task of Project Edrehab to actualize that capacity.

Somewhat extraneously to the present discussion, it may be observed that inspection of Table1 leads one to speculate whether race or sex characteristics are more decisive in the educational and psychosocial dynamics underlying hard-core unemployment. Finally, the pattern which emerges is the familiar circular relationship between early school leaving, frequent horizontal job changes between occupational clusters requiring little skills and offering neither economic nor psychological security, frequent periods of sporadic or chronic unemployment, and *economic superfluity* in an industrialized society.

Performances at Twenty Weeks

Prior to referral for enrollment, prospective Project Edrehab trainees had been administered the GATB. Prior to enrollment, as has been mentioned, they were administered the California Short-Form Test of Mental Maturity (CTMM) and the Stanford Achievement Test Battery; in addition, they were given the Revised Beta Examination, a non-verbally-loaded group test of intellectual functioning developed from the long-revered Army Beta, and the Ammons-Ammons Quick Test (QT), a clinically-administered, non-verbal, "culture-fair" test of intelligence. Subsequently, at the termination of twenty and thirty-six weeks, respectively, subjects were retested on these measures.

Subjects whose performances, after twenty weeks of basic educational skills improvement in Project Edrehab, on the GATB had increased to the level of minimal or higher qualifying scores for a variety of vocational training programs, were so placed. Other enrollees completed an additional sixteen weeks (for a total of thirty-six) in Edrehab. Table 2 summarizes performances on the CTMM, Beta, QT, and GATB prior to enrollment and at the completion of twenty weeks for enrollees who either entered vocational training or terminated "for good causes" (generally, to accept full-time employment situations to which they had been referred by the Edrehab staff) at that point.

Table 2: Mental and Vocational Aptitude Test Performance After 20 Weeks

GROUP A: ENTERED VOCATIONAL TRAINING

	Male Caucasian (N - 8)		Male Negro (N - 9)		Female Negro (N - 8)	
Measure/Score	Pre	20 Wks	Pre	20 Wks	Pre	20 Wks.
California IQ	57.3	*	58.8	*	66.5	*
Beta IQ	88.5	100.0	92.1	100.9	83.8	89.2
Quick Test IQ	85.1	99.3	71.6	91.6	63.4	87.2
GATB-V (Verbal)	72.2	83.3	71.8	79.6	73.1	86.0
GATB-N (Numerical)	60.6	81.7	55.3	74.7	61.2	79.4
GATB-S (Spatial)	72.8	86.6	68.1	81.0	75.2	84.1
GATB-P (Form Perception)	63.0	73.3	48.3	77.2	63.1	76.8
GATB-Q (Clerical Perception)	72.2	86.6	69.9	87.5	75.7	85.3
GATB-K (Motor Coordination)	65.7	77.5	65.3	79.4	84.5	97.1
GATB-F (Finger Dexterity)	67.5	87.5	75.6	83.3	89.7	116.8
GATB-M (Manual Dexterity)	79.7	84.3	83.1	89.2	102.8	106.2

GROUP B: TERMINATED FOR GOOD CAUSE

	Male Caucasian (N - 4)		Male Negro (N - 4)		Female Negro (N - 4)	
	Pre	20 Wks	Pre	20 Wks	Pre	20 Wks
California IQ	69.0	*	64.0	*	54.7	*
Beta IQ	90.5	100.5	87.1	89.8	73.1	82.5
Quick Test IQ	68.0	85.3	68.2	80.4	64.0	86.0
GATB-V (Verbal)	68.3	78.3	69.5	75.4	71.0	77.0
GATB-N (Numerical)	69.7	78.6	59.7	70.5	59.6	85.5
GATB-S (Spatial)	68.1	92.0	66.5	73.8	56.3	68.7
GATB-P (Form Perception)	73.4	82.6	59.7	65.5	56.3	79.2
GATB-Q (Clerical Perception)	71.6	73.3	71.3	84.7	74.0	87.5
GATB-K (Motor Coordination)	66.6	71.0	65.3	79.4	73.3	98.2
GATB-F (Finger Dexterity)	70.6	78.5	77.6	95.2	96.5	117.0
GATB-M (Manual Dexterity)	80.1	86.5	99.6	128.0	81.9	93.5

* Not administered after 20 weeks

What is most immediately arresting in Table 2 is the range of differences in IQ levels on the three instruments utilized. While initially Edrehab enrollees earned scores on the CTMM which fall well below the borderline defective range, they earn scores on the Beta and the QT which place them only slightly below normal and well within the "dull normal" range. It is quite evident that the three instruments, while each reliably measuring many aspects of intellectual functioning or learning ability, measure quite different aspects. The differences reported in Table 2 are sharpened when one considers that the three instruments have quite similar statistical properties, including similar standard deviation values, so that scores are relatively comparable cross-sectionally. A number of interesting observations suggest themselves as one scans Table 2 across sex and race lines. The similarity of mean scores on the Beta and QT for male Caucasians suggests these tests concurrently validate themselves for these subjects. But, if this is so for white subjects, how does one account for the wide disparity between mean Beta and QT scores among Negroes of either sex? How culturally neutral is a "culture-fair" test?

Further, it is difficult to suggest that one or another instrument measures the mental ability levels of hard-core unemployed workers more "accurately" than another. Earlier it has been suggested or at least implied that a prime characteristic of an instrument which measures "pristine" ability is its stability, or lack of susceptibility to influence arising from intervening educational, social, or cultural experiences. Yet the instruments in question fluctuate quite widely as a result or at least as a correlate of the subjects' participation in basic educational training. In view of dire social consequence attendant upon selection of alternative measuring devices, the social service-oriented researcher might be tempted to champion that instrument which seems to hold greatest hope for an alienated people in a gray world---but he should be aware of the roots of his judgments and be aware, too, that he is largely playing a game with himself. The cold fact of the matter is that one is or is not mentally retarded, is or is not vocationally trainable, is or is not an economically superfluous person not so much on the basis of one's own behavior but on the basis of the structure of a measuring device.

Before interpreting the meaning of changes in GATB performances reported in Table 2, it is necessary to consider some of the statistical (as opposed to structural---for that is another matter) properties displayed by this instrument. The standard deviation value on each component test of the GATB is equivalent to 20 scaled score units or "points"; its standard error of measurement is roughly approximate to six and two-thirds scaled score units. That is to say, if one were to test and "infinitely" retest a subject whose initial score, say, on the V Test, was recorded as 80, one would expect that <u>by chance alone</u> two-thirds of the scores recorded for the subject would vary between 73 and 87, and these fluctuations would arise only from the operation of chance factors alone. Similarly, one would expect that 98 percent of the time the subject's scores would vary between 66 and 94 <u>by chance alone</u>.

It would be impossible to produce elaborate statistical evidence to demonstrate that the differences in test performance reported in Table 2 are or are not due to the operation of chance factors. But it seems to this writer not only unnecessary but perhaps even tragic to feel compelled to do so. The fact of the matter is that, prior to their exposure to Project Edrehab---and the writer believes that its paramount value was simply the encounter

between those who had been defeated and those who cared---these hard-core unemployed workers had indeed been regarded as unable to profit from vocational training. After their exposure, because their performances rose here 7 points, there 19 points, they were regarded no longer as superfluous people. Whether Project Edrehab did no more than help these subjects make chance work for them by helping them increase their sense of self-sufficiency--- or rekindling it---is not the issue. What is important is that, in a complex, industrialized society, decisions are made about people on the basis of, but without regard to, the operation of chance. Not the instruments, but the selection process itself must be called into question.

After this long preamble, it is profitable to look at the "hard" evidence contained in Table 2. Male Negro enrollees who completed educational training in 20 weeks and entered vocational training performed in such fashion on the readministration of the GATB that they appeared to have gained from 8 scaled score points (in verbal aptitude, finger dexterity, and manual dexterity) to 29 (in form perception), while their Caucasian counterparts apparently gained from 5 (manual dexterity) to 21 (numerical). Female Negro enrollees appeared to make greater gains, from 6 (manual dexterity) to 18 (numerical aptitude). Since Project Edrehab's instructional program was limited to communication arts and arithmetic skills, it is interesting to note gains reported in perceptual and motor skills, since these formed no part of the intervening educational experience. It is evident from Table 2 that enrollees who elected to terminate for good cause appeared to make gains similar to those of enrollees who entered vocational training, although their initial levels varied somewhat.

Performances at Thirty-Six Weeks

Edrehab enrollees who completed thirty-six weeks of educational skills training and subsequently entered vocational training were retested after the completion of twenty and thirty-six weeks respectively. These scores are tabulated in Table 3.

Table 3: Mental and Vocational Aptitude Test Performance After 36 Weeks

	Male Caucasian (N - 12)			Male Negro (N - 12)			Female Negro (N - 10)		
	Pre	20 Wk	36 Wk	Pre	20 Wk	36 Wk	Pre	20 Wk	36 Wk
Measure/Score									
California IQ	57.3	*	68.3	47.7	*	77.1	67.5	*	86.6
Beta IQ	81.5	93.2	98.4	84.0	87.1	92.3	84.8	93.8	95.2
Quick Test IQ	62.3	90.1	**	64.7	86.8	**	75.0	86.1	**
GATB-V	71.6	76.3	78.4	65.8	69.7	81.0	71.7	76.8	79.7
GATB-N	58.6	65.6	67.6	50.9	66.4	67.8	65.1	85.1	89.0
GATB-S	75.3	81.1	85.1	60.2	66.7	73.6	65.4	81.9	87.2
GATB-P	61.5	74.5	78.3	39.6	56.8	66.1	71.4	89.3	93.4
GATB-Q	71.9	74.5	79.4	64.8	69.7	78.0	80.9	90.6	93.3
GATB-K	67.8	69.1	73.6	52.2	57.1	72.7	81.7	100.7	105.6
GATB-F	67.8	70.1	82.3	55.6	67.5	78.4	85.6	104.2	112.3
GATB-M	71.7	81.6	91.3	63.2	70.8	76.3	98.7	101.9	120.1

* Not administered after 20 weeks ** Not administered after 36 weeks

Inspection of Table 3 suggests the following considerations: (1) Performances on the three measures of mental ability employed fluctuate considerably in association with increased exposure to an educational rehabilitation program. (2) In general, the greatest gains in vocational aptitude test performance appear to occur after 20 weeks of educational skills improvement, at which point a plateau or point of saturation is observable, especially in aptitude areas related to the instructional program, though increments are observed in perceptual and motor skills.

Summary

This paper has reviewed certain effects of an educational rehabilitation program upon the stability of vocational and mental aptitude test performance of hard-core unemployed workers who showed evidence of educational retardation.

Specifically, it has been reported that

1. Male Caucasian enrollees who entered vocational training after 20 weeks in Edrehab demonstrated apparent increments of 12 score units on the Beta, 14 on the Quick Test, 10 in verbal aptitude as measured by the GATB, 21 in numerical, 8 in spatial, 10 in form perception, 14 in clerical perception, 12 in motor coordination, 20 in finger dexterity, and 5 in manual dexterity.

2. Male Negro enrollees who entered vocational training after 20 weeks demonstrated apparent increments of 8 score units on the Beta, 20 on the Quick Test, 8 in verbal aptitude, 19 in numerical, 13 in spatial, 29 in form perception, 18 in clerical perception, 14 in motor coordination, 8 in finger dexterity, and 8 in manual dexterity.

3. Female Negro enrollees in this group showed apparent increments of 6 on the Beta, 14 on the Quick Test, 13 in verbal, 18 in numerical, 9 in spatial, 13 in form perception, 10 in clerical perception, 13 in motor coordination, 17 in finger dexterity, and 6 in manual dexterity.

4. Male Caucasian subjects who terminated for good cause after 20 weeks of educational training but before entering vocational training showed apparent increases of 10 on the Beta, 17 on the QT, 10 in verbal, 9 in numerical, 24 in spatial, 9 in form perception, 2 in motor coordination, 5 in clerical perception, 8 in finger dexterity, and 6 in manual dexterity.

5. Male Negro subjects in this group showed increases of 2 on the Beta, 12 on the QT, 6 in verbal, 11 in numerical, 7 in spatial, 6 in form perception, 13 in clerical perception, 14 in motor coordination, 18 in finger dexterity, and 29 in manual dexterity.

6. Female Negro subjects in this group demonstrate apparent gains of 9 on the Beta, 17 on the QT, 6 in verbal, 26 in numerical, 12 in spatial perception, 23 in form perception, 13 in clerical perception, 25 in motor coordination, 21 in finger dexterity, and 12 in manual dexterity.

7. Among Edrehab trainees who completed a full thirty-six week of rehabilitative educational training, male Caucasian subjects demonstrate apparent increments, after 20 and 36 weeks respectively, of 2 and 8 on the Beta, 28 on the QT and 11 on the CTMM, 5 and 7 in verbal, 7 and 9 in numerical, 6 and 10 in spatial, 13 and 17 in form perception, 3 and 8 in clerical perception, 5 and 6 in motor coordination, 12 and 15 in finger dexterity, and 7 and 20 in manual dexterity.

8. Their male Negro counterparts demonstrate, after 20 and 36 weeks respectively, increments of 3 and 8 on the Beta, 22 on the QT and 30 on the CTMM, 5 and 16 in verbal, 16 and 17 in numerical, 6 and 13 in spatial, 17 and 27 in form perception, 5 and 14 in clerical perception, 5 and 20 in motor coordination, 12 and 24 in finger dexterity, and 7 and 23 in manual dexterity.

9. Their female Negro counterparts demonstrate, after 20 and 36 weeks respectively, increments of 9 and 11 on the Beta, 11 on the QT and 19 on the CTMM, 5 and 8 in verbal, 20 and 24 in numerical, 15 and 22 in spatial, 17 and 22 in form perception, 10 and 13 in clerical perception, 20 and 20 in motor coordination, 19 and 24 in finger dexterity, and 3 and 8 in manual dexterity.

The results reported suggest that:

1. In general, scores on the Beta appear more stable as indicators of mental ability among educationally-retarded workers than scores on either the CTMM or the QT. Stability of Beta scores seems to indicate that the instrument represent a closer approximation to measurement of "prinstine" ability, since performances seem less affected by intervening learning experiences. The CTMM and QT appear more susceptible to change in the form of greater increments following intervening learning experiences. These considerations seem to argue in favor of adoption of the Beta as a device to measure mental ability among educationally-retarded workers.

2. Generally, higher initial performances on mental ability measures are associated with smaller increments. This observation suggests a stabilizing of mental ability scores once a point of saturation has been reached, above or beyond which increasingly smaller increments are likely.

3. In general, initial performance levels on the GATB in verbal aptitude are more resistant to change than are initial levels in numerical aptitude or in perceptual-motor skills.

4. Generally, higher initial levels of performance in vocational aptitudes are associated with greater apparent increments.

5. Dramatic increments in perceptual-motor skills are observable, even though these skills are not focal points for instruction in an educational rehabilitation program.

6. Instructional experiences in basic educational skills extending over twenty or thirty-

six weeks are associated with marked increases in inventoried mental and vocational aptitude sufficiently large to gain entry for workers into vocational training or retraining programs.

Similarly, instructional experiences were associated with compensation for educational deficiency of from one to three years. More severely educationally retarded enrollees appeared to need a longer period of compensatory educational experience.

DR. VITELES: Thank you very much, Mr. Pallone.

Our next speaker is Mr. Droege who has a Master's degree in psychology from the University of North Carolina and is currently a psychologist with the U.S. Employment Service and has, indeed, worked in the area of test research with the U.S. Employment Service and the Department of the Army for 13 years.

Mr. Droege is going to speak on "Current Research in Test Development."

Mr. Droege.

MR. DROEGE: The average age of the nation's labor force continues to increase, and growing numbers of older workers are being involuntarily retired or technologically displaced and compelled to look for other jobs late in their working lives. Many of those who need help in finding suitable new employment will not be able to obtain jobs closely related to those they had previously. To what extent can testing help determine what other occupations these older persons can learn and perform successfully?

The USES has recognized that there are special problems in obtaining valid and meaningful measurements of job potential of older individuals. Some of the problems are these:

1. Most research to develop aptitude tests for use in selection and counseling has been done with young people. Are these tests useful also with older workers?

2. Many older job applicants or training candidates have little education and test taking experience. What special techniques are required to overcome this handicap?

3. Number of years of formal education is an inadequate indication of achievement level of an older person. But currently available tests of basic reading and arithmetic skills have disadvantages when used with older persons. How can these disadvantages be overcome?

The U.S. Employment Service has undertaken a program of research in these areas. Some projects under this program have been completed some are in progress, and others are being planned.

Applicability of Aptitude Tests to Older Workers

The Employment Service uses the USES General Aptitude Test Battery (GATB) to obtain measures of occupational aptitude. The GATB consists of 9 aptitudes measured by 12 tests. The 9 aptitudes are G-General Learning Ability, V-Verbal Aptitude, N-Numerical Aptitude, S-Spatial Aptitude, P-Form Perception, Q-Clerical Perception, K-Motor Coordination, F-Finger Dexterity, and M-Manual Dexterity. The GATB was published in 1947. Since that time, we have accumulated a vast amount of standardization data on the GATB, so that it is now generally regarded as the best validated aptitude test battery in existence for use in vocational guidance.

Since most of this research has been done using samples of younger workers, a question arises as to the applicability of the tests for older persons.

1. Completed Research

We have completed some research showing the relationship between aptitudes and age for adults. Two different studies were conducted, one in New York and the other in four States--California, Pennsylvania, Iowa and Michigan. The New York sample consisted of 1,476 individuals. The four-State sample consisted of 2,439 individuals. The design for the four-State study was similar to that for the New York study. The chief difference in the designs was in the type of control on education. In the New York study the individuals in each age interval had the same percentage distribution of years of education; in the four-State study each individual in the sample had the same number of years of education (12 years).

In general, the pattern of relationship between age and average aptitude scores is similar in the two studies. (I can provide details of these findings, on request.) Inspection of the age curves shows that all aptitudes, except Verbal Aptitude, show some decline in average scores with age. However, the decline is not large for General Learning Ability and Numerical Aptitude. The largest declines (up to 40 points from age 17 to 72) were obtained for Form Perception, Finger Dexterity and Manual Dexterity. Declines of about 20 points from age 17 to age 72 were obtained for Spatial Aptitude, Clerical Aptitude and Motor Coordination.

There is variation among the aptitudes with regard to age of onset of decline. General Learning Ability and Numerical Aptitude show no decline until about age 47. Clerical Perception, Motor Coordination, Finger Dexterity and Manual Dexterity show little or no decline until about age 32. Spatial Aptitude and Form Perception start declining before age 20. After the age of onset, the decline with age is approximately linear.

Note that any interpretation of the results of the age curve studies must be in terms of averages. Since individual differences in rates of change of aptitude scores with age are likely to be substantial, age curves for many individuals may differ considerably from curves based on average scores.

2. Research in Progress

Availability of reasonably good age curve data for GATB aptitudes makes possible the development of age norms for the aptitudes. That is, obtained scores can be adjusted so

that the average adjusted aptitude score is the same throughout the age range. Since there is a marked decline in obtained scores with age on most of the aptitudes, the corresponding adjustments would be substantial for older individuals. The question of the desirability of making such adjustments to develop age norms for intelligence and aptitude tests is an old one which has not been resolved. One basis for deciding between unadjusted and age-adjusted aptitude scores lies in comparison of the relative validity of the two sets of scores in prediction of performance for appropriate occupational samples. Research is in progress to determine the validity of age adjustments for aptitudes in prediction of job performance.

Preliminary data from 11 longitudinal studies on specific occupations of widely varying requirements and skill levels indicate that, in most instances, unadjusted and age-adjusted aptitude scores do not differ appreciably in how well they predict training success or early job success.

With reference to the occupations included in this investigation, age adjustments in the aptitude scores resulted in substantially better prediction for only one occupation, but such adjustments resulted in substantially worse prediction for two occupations. For the remaining eight occupations the differences between age-adjusted and unadjusted score prediction were quite small.

3. Research Planned

The investigation on effect of age adjustments was limited to comparisons of validity coefficients of unadjusted and age-adjusted aptitude scores. We plan an additional study (on the same 11 samples) focusing on the individuals who fail established aptitude cutting scores for specific occupations when unadjusted scores are used but pass the same cutting scores when age-adjusted scores are used. Analyses will be done to determine whether these workers who shift from a fail to a pass category on the tests are more like successful workers or unsuccessful workers.

Development of Appropriate Testing Tools and Techiques for Educationally Deficient Individuals

Recently the emphasis in our occupational test development work has changed because of increasing interest in serving educationally dificient individuals. Since many of the hard-core unemployed do not have sufficient literacy skills to take all of the GATB tests, we have undertaken a number of research projects to develop tools for use with these individuals, many of whom are older workers.

1. Research Completed

One of the problems in testing persons with limited education is determing whether the GATB would be a fair measure of their aptitudes. In the past, many of these individuals have been included in group testing sessions for the GATB without such a determination. The result has been that low scores were not meaningful, because there was no way of knowing whether they were a reflection of limited ability, inadequate reading ability, or cultural limitations to perform adequately on the tests.

For this reason, we undertook the development of a short, objective, easily scored screening device to determine the ability of individuals to take the GATB. The device was developed from the practice items for the GATB tests. Eight State agencies participated in the study. More than 800 persons with 8 or fewer years of education were tested.

Results of the study led to the development of a screening device, which consists of three-dimensional space and vocabulary items.

2. Research in Progress

We have undertaken research to develop a nonreading edition of all nine GATB aptitudes which can be administered to persons who are lacking in the basic literacy skills required to take the regular edition of the GATB.

In our work on the new USES nonreading tests, we are making every effort to develop a more suitable method of administration for use with educationally deficient individuals. The directions will be simplified and the format of the tests will have a unique feature. The pictures, forms, and diagrams will be printed directly on a machine-scorable answer sheet. The applicant will be able to make his marks in the appropriate places on the answer sheet even if he cannot read or write.

Fourteen experimental USES tests are being set up in this format. Each of these has been tried out with poorly educated individuals to get information on administration problems and score and time distributions. These tests are now being included in larger scale studies to determine their usefulness for measuring the aptitudes of the educationally deficient individuals for whom the GATB is inappropriate.

3. Research Planned

We plan to conduct a variety of studies on techniques of test administration to uneducated individuals, studies on prediction of success in training (both basic literacy skills and vocational training) and prediction of success on the job, using a variety of tests as experimental predictors.

Development of Achievement Test of Basic Literacy Skills

Tools are also needed to assess achievement level in basic reading and arithmetic skills. The commercially available tests have a number of disadvantages: They are too long; the items are not completely suitable for adults; and no occupational norms are available to permit evaluating the scores in terms of degrees of basic skills required by various occupations. We are now negotiating a contract with a university for the construction of suitable achievement test items. After this phase has been completed, we will solicit the cooperation of State Employment Services in conducting the necessary standardization on experimental samples.

Summary

In summary, the USES has (1) recognized the need for valid measurement of

occupational potential of older persons, (2) identified problem areas of measurement and (3) undertaken an aggressive program of research to work toward solutions. Certainly more could be done, but our resources are limited and must be applied to other problems as well.

It should be recognized that there is an alternative to a solid, but time-consuming, research effort. The alternative is to arrive at quick solutions to complex problems of testing on the basis of analysis of inadequate data or on the basis of superficial considerations. Particularly in these days of rapidly evolving programs for youth, older workers, the disadvantaged, etc., there is a real danger that the quick solution to hard problems will take the place of the solid research that is required.

One final word. As the tests and measurement techniques become more refined and appropriate for the purposes intended, we cannot assume that they become less subject to misuse. Qualified counselors sensitive to the needs of the client will always be needed if the tests are to be properly used.

DR. VITELES: Thank you very much.

Our next speaker is Dr. Kenneth Carl who took his degree in education at the Pennsylvania State University in 1959, who has had suitable training and experience both in education and in dealing with problems of training workers and who is currently President of the Williamsport Area Community College.

Dr. Carl will speak on "Vocational Diagnosis vs. Simple Testing Programs for Selection and Orientation of Training for Older Workers."

DR. CARL: Thank you, Mr. Chairman. Ladies and gentlemen. I want to make sure that you understand that I am interested in a selection of, and the orientation to, the best possible occupational choice for the training of the individual unemployed older worker. I care not that you have 30 training stations available to unemployed older workers to learn to be sewing machine operators and that you have reasonable assurance that those persons who satisfactorily complete their training will be employed at X company at $1.75 per hour to start.

I am afraid that most of our training of unemployed adults has been job-oriented rather than person-oriented, or job-engineered, if you prefer. I do not believe we have solved the long-range unemployment problems of most of those persons who have received training or retraining under ARA or MDTA when this training was based on this job-oriented philosophy. This is certainly true of the hard-to-reach, hard-to-teach group.

Or look at it another way. We are essentially saying to the unemployed, "We will provide training for you to learn to be a sewing machine operator at no expense to you. In fact, we will pay you at the rate of the regular unemployment compensation for as long as the training lasts -- up to one year -- if you are the head of a household. We have assurance from X Company that they will have employment for you when the training is

completed. To qualify for training, it is necessary that you show you have at least the minimal aptitude for this kind of work by taking our tests" -- usually the GATB.

So what do I do as an unemployed older worker? If I am really up against it and my unemployment compensation is about to run out, I take the tests, and the training, and the job. But I get out of this rat race as soon as possible because I want to be an auto-body repairman.

This kind of counseling hasn't solved any problems except that a training referral has completed his training and accepted a job which was held for a certain length of time -- and so statistically, it has been successful.

It is interesting to note that the November 10, 1965, report of the National Council on the Aging project in Boston states:

> "Earlier in the Project, there was a strong tendency for us to lead the applicant into jobs which the Project had previously developed. -- Most of the time, the applicant would not be sold on the jobs developed so that a large number of jobs were never utilized. -- The process had to be reversed. Job counseling <u>first</u> and then job development based on the applicant's interests and abilities."

Another related fact we must consider is how many people are suffering from the consequences of a practical type of job counseling. As counsellors, we attempt to point out to the individual where he can realistically go in the job market according to the experiences that we have had.

I am a vocational high school graduate. And my vocational training was in mechanical drafting in high school. Upon graduation from high school, I was employed as a draftsman. After one year of industrial experience at that occupation, I was laid off in September 1932, in the midst of the Depression. If I had come to you as a counselor at that time for help, what would you have counseled me to do -- a vocational high school graduate? Would any one of you have thought that I could have become a college president?

As counsellors, we are prone to think of local jobs and jobs as we know them in our limited experience. We must think today of <u>national</u> needs and markets in counseling with people, for their potential far exceeds the limited local opportunities in the occupational world. The new edition of our "bible" -- the long awaited revision of The Dictionary of Occupational Titles will soon be in our hands and will list for us some 39,000 occupations. The problem then will be the same one we have today -- in which area do my talents lie and how do I get there?

To properly counsel each individual as to his vocational potential and help him plot the path to this potential from where he now is involves an extensive guidance and counseling program which we have called for want of a better name "Vocational Diagnosis." We developed this program in 1951 in an attempt to help several hundred members of the United

Mine Workers of America, disabled miners of all ages who could no longer return to their jobs in the mines because of severe disabilities. Disabilities such as silicosis, miners' asthma, heart conditions, broken backs, loss of limbs, eyesight, hearing, all were common, as was a third-to eighth-grade education. And the ages ranged from 30 to 60. I recall one even at 65.

We had as many as 70 of such clients enrolled in either vocational diagnosis or full-time training at one time, in addition to all of our other students. In addition, some of the clients were undergoing physical therapy at the local hospital after school hours in order for them to regain the use of their injured limbs.

I assure you that a few psychological tests, as contained in the usual test battery such as the GATB, are not enough for this group.

As you can imagine, we realized that in order to make a proper vocational diagnosis of the individual, we certainly must know his physical condition and any physical limitations. We, therefore, need a physical examination of the individual to particularly learn of any physical limitations which would affect his occupational choice. Those diseases which are not evident on the surface, such as a heart condition, lungs, epilepsy and many others, cause us many problems in counseling if we are unaware of their limitations on the individual. We should know any medical or physical history the client has had. The M.D., of course, cannot tell us what occupations are best for the client, because he does not know occupations, nor should he be expected to. But we do need from him any limitations in walking, standing, lifting, stooping, sitting, hearing, sight, environmental conditions, such as warm and cold, allergies to dust or oils or other materials, and so forth. As we become older, we acquire such physical limitations which must be considered.

Our present program of voational diagnosis is of three weeks' duration. The staff consists of a competent psychologist and two qualified vocational counselors who have their Master's degrees in Rehabilitation Counseling. We admit an average of 25 clients to each three-week session. The first week is spent in getting to know the individual and helping to motivate him and assure him that he can succeed. His group tours the College, sees the shops and labs and the 44 courses that are available to him at this school which do not require a four-year college degree for graduation. Each department head explains the opportunities available in his department, the working conditions, wages, new advances being made in the industry, and the number of different jobs available to persons with this training, such as the machine shop where we may have as many as 500 different jobs awaiting the trainees. Many are occupations that the client had only heard about but had no understanding of.

It would be nice if we had a few simple tests that could be given to an individual to determine which one of the 39,000 different jobs would be the one for that particular individual. But, unfortunately, it is not this simple and probably never will be.

We administer testing involving all the usual aptitude, interest, intelligence,

comprehension, dexterity and visual acuity tests which are given under the supervision of a competent psychologist who must determine if the tests have any validity considering the physical condition of the individual. If not, other types of individual tests must be prescribed in an attempt to learn the capacity of the individual. In some cases where either the M.D. or the psychologist may discover a mental problem, the client would also be referred to a psychiatrist for his evaluation. If serious, all other counseling stops until this problem is removed or brought under control by the psychiatrist.

Upon completion of the physical and psychological evaluation and the tour of the College, we are ready for a job trial situation lasting for approximately three days in each of several occupational areas which were shown by the testing and the physical evaluation to be the ones best for the particular individual. We allow the client to pick the first one to be tried, providing it is within his physical limitations. Our counselors and psychologist suggest and insist, if necessary, that he also try others in which he has a reasonable chance of success so that he has at least tried three and possibly four different occupational areas.

His instruction in each area has been designed to challenge him, and we can measure his aptitude and interest in the area by evaluating how well he has done in this work, compared with others who had previously taken the work and gone on and succeeded.

In some cases, the client expresses interest or the tests indicate aptitude in an area in which we do not offer instruction or work trials in our school. Arrangements are then made to have the client visit and spend a few days in this occupational area in the community, such as the local hospital if he would be interested in becoming an X-ray technician, which we do not presently teach.

The last day of the three-week program is spent in an evaluation and determination of the future plan for each individual. This is done by a committee composed of the psychologist, counselors, the doctor, a representative of the State Bureau of Rehabilitation, a representative of the State Employment Office, a representative from any other group sponsoring the student, such as the VA, or parent, or UMWA, and so on, plus the heads of the departments or areas in which the client tried the miniature work situations or job trials. This committee discusses the client and his whole history -- work, education, physical, psychological, marital status, et cetera, and reviews his work and the counseling done in the program. When a conclusion has been reached by the group, the client is brought in, and he is asked what he has decided he would like to do now. In most cases the client has already made up his mind, and the group concurs and offers him encouragement toward his new goal. Many times it is in an area he never knew existed before he entered this vocational diagnostic program. Once the occupational area has been determined, it is then fairly simple to find a training situation for him.

To date, 3,621 adults have completed our vocational diagnostic program. Approximately 10 per cent have been 40 years of age or older. Lately, the average age has been younger. Primarily, they are high school dropouts and young high school graduates who are confused and do not know what they want to be or do. A few are college drop-outs or

flunk-outs. Over one-half of the total number we have had are physically handicapped.

We have probably not kept all of the statistics we should have on this program, and some day we should do a full follow-up study. The closest estimate we have from periodic checks would indicate that this program has helped at least 90 per cent of the clients.

If anyone wishes to try this program in his community, be sure you have a considerable number of shops, labs and courses available that are well equipped to provide work trials with a wide range of aptitude, skill and comprehension. Ours vary from linoleum laying and tile setting up through and including data processing, tape control and all of this sort of thing, into tool making, tool design, electronics, et cetera.

I should mention the MDTA program. We wonder at the fact that it is reported by the Secretary of Labor to the Congress that 10.9 per cent of the trainees under the Manpower Development and Training Act were 45 years of age and over. We think that this is an insignificant number of older unemployed workers. It is a most significant number when we think of the percentage of unemployed older workers to total unemployed -- 38.9 per cent -- and of the fact that the older the group, the less general basic education and the more physical and mental handicaps in the group. It is surprising to me that even this percentage survived the GATB tests to gain admission to the training program. It is even more significant when we think of the limited training opportunities that have been open to them.

At the present time we have approximately 50 MDTA trainees in our college out of a total full-time enrollment of 1,413 students. We are operating three MDTA courses -- surgical technician, bench carpentry, and woodworking machine operator. The MDTA trainees who complete their training are all going to work.

We do not plan to offer any more full-time MDTA training courses, that is, courses which are only open to MDTA trainees. We will now accept MDTA trainees in every course we offer on an individual referral basis. They must meet the same entrance requirements for the particular course as any other student in that particular course. They must perform to the same standards. We believe that this will provide many more opportunities for MDTA trainees to prepare for the occupation they desire and have the aptitude for. So instead of only three courses open to them, they now have 44, which should help to take care of the individual differences in this group. Thus, our MDTA training program will become person-oriented rather than job-oriented.

I wish Bernard Ulrich had included vocational diagnosis as a part of the study that he mentioned this morning. I feel that the systems approach needs a vocational diagnostic program with job trials added to it. Six hundred hours of prevocational training is quite a lot for most older workers.

Thank you.

DR. VITELES: Thank you.

I believe it is time that the Employment Service and other agencies connected with the manpower program become oriented toward the individual who seeks our service rather than towards a job or an employer. And this is the philosophy we have tried to move to in our Employment Service operations in our small State in the Western mountains.

I explored with some of our counselors and our selection officers in MDTA how we accomplished this record. And this is what they told me:

They took an interest in the applicants who had application cards in our file. They reviewed them. They called them in. They talked to the individuals. They became acquainted with them. And they attempted to design a plan of service to fit the individual's needs.

Sometimes the applicants would be called in in groups. Unfortunately, in these groups they do not mix the sexes, but the groups otherwise are heterogeneous rather than homogeneous -- that is, of different social, cultural, ethnic backgrounds. The educational attainment ranges from no schooling to college graduates. Our counselors have group discussions with the individuals to motivate them. And I believe that this is one of the keys to our service to the individual -- the attitude of our staff, the attitude of the community, and the motivation that is provided to the worker.

This is not the complete story. I would like to talk about something else. But before I leave attitude and motivation, the local employment office reflects the attitude of the community toward the employment of any group, whether it is a minority group, the older workers, youth, the unemployment compensation claimant or any other person. The local employment office attempts to interpret the feelings of the business community and the feelings of the labor community in their operations. Our instructions, on selection of trainees, are to select for the projects we propose trainees who have a reasonable chance of obtaining employment. And if selection is job-oriented, instead of oriented to individual needs, I believe that we do discriminate against the older person. Certainly, the use of tests as the sole criterion for the inclusion of a trainee in a program would lead to serious disservice to many of our applicants in all age groups. I don't believe this tells the whole story.

I divided our trainees into three groups and made an analysis of the data. I separated out the data for our three very good special youth projects. I separated out the data for another group that I will talk about, in a minute. And the remainder fell just about on the national average in the proportion of older workers to the rest of the workers in our training program.

Now I would like to talk about the second "separated-out" group. Here, I believe, we find our answer to our puzzle. We also find something that can be exploited in serving the older worker.

Several years ago, we realized that there was a rapidly changing technology in the

construction industry. We made an intensive study in construction in Utah and in the jurisdiction of Building Trades Councils which lap over our State lines in some instances. We found that there were a number of construction workers who were rapidly becoming technologically obsolete. Their periods of unemployment were becoming more frequent, and the duration of their unemployment was becoming longer.

The construction industry was concerned about the lack of qualified tradesmen for that industry. They were trying to get their apprenticeship programs enlarged to meet the shortage of skilled workers. The construction unions were concerned about their members not being employed full time. And they were concerned about the apparent lack of skilled construction workers who could be used by employers.

I proposed to the construction industry, both management and labor, that we take the individuals who had become or were rapidly becoming technologically obsolete and provide them with upgrading training. And the first three MDTA projects in Utah were of this type.

We selected from the construction trades, along with management and the unions, those persons who had become technologically obsolete as evidenced by their lack of employment during a relatively high construction period. We designed a training program, along with Vocational Education and with the advice of the construction industry and the labor unions. We sent these men to school.

We started with carpenters. And just as soon as the other construction trades found out what we had done for carpenters, they were in pounding my desk. The business agents wanted the same break for their members. They were complaining that we were discriminating against them in favor of the carpenters.

We set up a training program for the structural steel workers, one for the ironworkers, one for the sheetmetal workers, and then something happened. I was informed that the Internationals of some of the unions did not want to get involved in this program. Perhaps that is right; I do not know. This I do know. We have had several very successful upgrading training programs for carpenters and steel workers, and these unions have asked us to repeat these upgrading training programs several times. And, just through the nature of things, if you take a skilled construction worker, a person who has worked in the construction trades for a long time, who has become technologically obsolete, he is bound to be over 45 years of age or very close to it. Most important, this is a preventive approach rather than a cure of long-term unemployment. The early identification of workers who are becoming occupationally obsolete, the providing of these workers with either up-grading training or retraining before they become unemployed, is a positive rather than a passive program in solving some of our unemployment problems.

And now, Dr. Viteles, I have talked for 19 minutes. I am going to quit.

DR. VITELES: Thank you.

Well, I think you all recognize that we have been exposed to a number of most stimulating ideas with respect to dealing with the problem of selecting older workers for training. We are now ready to proceed into the workshop. The problem of making use of what has been presented involves serious consideration on the part of the people who are out on the front lines dealing with problems of the older worker. And it is, of course, the group sitting here now which can most readily and most effectively come up with the practical recommendations.

We are going to discuss the selection of the older worker. It seems to me, we ought to start by defining what we mean by the older worker. At a caucus held at noon, it was agreed that we ought to think of the older worker as the man at least 45 years of age or older. Perhaps we can also think of the man between 40 and 45, but certainly not younger than 40.

There is a practical reason for doing so since industry explains its unwillingness to hire older workers very frequently on the grounds that the pension schemes which operate in most plants require 20 or 25 years of service. And the industry is not in a position to hire a man at age 35 or 40 and turn him out without a pension at the end of that time. And the industry is unable to give him a pension because of the rules which govern the allotment of pensions.

So 40 to 45 -- and especially the latter age -- seems to be a pretty good figure with which to start around which to center our discussion.

For women -- if we are going to discuss women -- it seems to me we might reduce the concept of "older" to about age 35 because, again, women are permitted to retire at age 55 or 60 as compared with 60 or 65 in the case of men. And also, because the prejudices which exist in industry with respect to the hiring of so-called older people make an impact at an earlier age in the case of women.

At my age, it is very difficult for me to conceive of anybody 35 or 40 or 45 years of age being old. But, nevertheless, this is the context in which we are working. And I suggest that we limit ourselves to the discussion of these groups.

Our mission is to come up with recommendations. And I would suggest, in order to start this discussion, that we think of recommendations that involve a statement of a series of principles governing the selection of the older worker for training and that these principles apply to action, development and research, these being, in fact, the three areas about which we heard from our speakers today.

By "action", I mean something that on the basis of what we know with some degree of certainty can be done now.

By "research", I mean those problems which need considerably more intensive and prolonged investigation, that need to be solved before we can come up with an action principle.

By "development", I mean the gray area in between, the kind of research that was briefly referred to by Dr. Droege, the approach which involves making use of data that are already available, facts which are already present in incomplete form, but offering the opportunity for a kind of sophisticated guess as to what should be the best course of action for the moment, pending a better resolution of the problem through research.

Does this seem to be a reasonable frame of reference for this workshop?

All right, the floor is yours. By "yours", I mean anybody. Who wants to start?

And please, as you get up, give your name and your association -- the organization which you represent. And do it each time, because we can't expect the young woman who is doing the stenotyping to remember who you are and where you are from.

DR. FRANK FAHEY (Director, Center for Community Analysis, University of Notre Dame, South Bend, Ind.): I am somewhat concerned or would like to have a little more information if at all possible. There has been talk about not getting the job set up first then setting up a training program and getting so many bodies to go into this training program, but rather to express concern for the individual and to find out what he wants to do, what he is capable of doing, and then organizing a training program about these facts. Well, if no jobs would then be available, I think that this is perhaps an unrealistic approach. And specifically to Dr. Carl who it appears has been doing this type of thing, I would like to ask the question: How many of the trainees that you have get jobs in the areas for which they have been trained?

DR. CARL: Approximately 100 per cent. We have a full-time placement office. We feel it is our responsibility to place every one of our students.

Of course, on the MDTA referrals, it is the responsibility of the State Employment Service. And we as a public school may do nothing in placement of these students and must refer the students back to the State Employment Service for placement.

Our shop instructors must have had at least six years in the industry. Some of them have 20 years in tool making and grinding, et cetera, et cetera. They know the supervisors in industry by first name. They worked in the plants. And, of course, you must remember that we are a small community of 42,000 people. This would not be possible in Philadelphia or New York City. But everybody is on a first name basis pretty much. Our instructors can call and talk with the supervisors of the varous area plants. When a job opportunity comes up for a milling machine operator, the instructor knows Johnny. He knows what Johnny can do and what his limitations might be, and can get some pretty close liaison here.

We have no problems in placement, particularly today. We have had as high as 400 Pennsylvania State Bureau of Rehabilitation clients attending our school for many years. Some of these could be New York State rehabs. We have had quite a large number of New

York State Rehabs and a few from many other States. I really do not feel there is too much of a problem in the placement of the older worker provided we can give him training.

We have had very little experience with the person who is of the hard-core, hard-to-reach, hard-to-teach group and who is functionally illiterate. Our work has been with those who were trainable, those we could train at least to be a drill press operator or a linoleum layer, something along this line, pattern making, plumbing, welding. And, of course, in welding, we can go to a welding technician which is a two-year program, or we can stop at 10 weeks and put out an acetylene aircraft welder who simply does various types of acetylene welds on aircraft tubing.

DR. VITELES: Mr. Carl, are you essentially saying, then, that your type of program is useful, is practicable, only in the smaller community, perhaps where you, indeed, know which jobs are available, where you can deterine with a great deal of certainty that a job will be available after the individual has been trained?

DR. CARL: I think you are interpreting me too literally here. I am sure it is applicable to Philadelphia or New York or any place else. However, we would not get down to this first name basis in a larger city, nor could the instructor know supervisors in industry as well as he does in a smaller community. Other than that, I would think it would be adaptable any place.

DR. VITELES: Yes, sir.

DR. R. MEREDITH BELBIN: (Consultant, Organization for Economic Cooperation and Development, Paris, France): "Selection for Training -- Do Present Practices Militate Against Older Workers?" I wonder if it might be worthwhile my having a stab at this particular question since it is the subject of this workshop. And may I propose to you the provocative question that present practices do militate against older workers, especially insofar as this GATB is applied under the MDTA program.

It is nearly always the case that where selection tests and batteries are applied, older people are excluded from training situations. The more rigorously they are applied, the greater the proportion that is excluded.

Now, perhaps the significant question we ought to ask ourselves is whether older people are being excluded from these courses on sound grounds. It might seem fairly rational, logically, to exclude people from training courses if their scores shown on certain selection tests are low. But we have had a fair bit of experience in England at examing the relationship between job performance and scores on a very wide battery of tests. And I have never ceased to be astonished at the very poor correlations that do exist.

To take a seemingly clear-cut case, that of designers in the textile industry. I don't know what sort of abilities you might imagine are necessary for the job of a textile designer, but one might suppose that one essential requirement was that the person should not be color-blind. And so the placement council applied a color-vision test for designers and proceeded to validate this on designers already in the industry. They came up with the astonishing result that some of the most successful designers showed color-vision defects -- quite serious color-vision defects.

And one of the things that seems to crop up so frequently in this field is that people obtain poor scores on certain types of performance tests, and yet they compensate for this in other ways, and that when trainees are highly motivated towards learning or motivated toward jobs, their ultimate performances are very much higher than might be predicted from selection tests.

So, with all this, I am wondering what our starting point should really be, what sort of value we should place on selection tests as far as the acceptance of older workers into training programs is concerned. And I would very much like to hear the views of the speakers on the subject. I would like to hear some sort of hypotheses put forward.

I think everyone so far has been frightfully circumspect and cautious about what they have said about selection tests. I would like to see some hypotheses put forward about the area where they think the most value is going to lie in the future in the administration of these tests.

DR. VITELES: In other words, so far as a practical recommendation is concerned, you would like to consider the possibility of making the recommendation that selection tests should be discarded?

I am not phrasing this as my hypothesis. I will if you want me to, but essentially, this is what you want us to consider?

DR. BELBIN: That's putting it very strongly.

DR. VITELES: Naturally.

DR. BELBIN: I would like to say that I think our starting point should be one of skepticism until the necessary work of validation has been carried out.

Now, in the General Post Office that I mentioned to you this morning, I referred to the fact that the Civil Service Commission administered a battery of selection tests on postmen. A similar battery is also applied to telephonists. And in one experiment, we selected groups of people who would have failed on the previous scores. There was a group of telephonists and a group of postal sorters. Each group was put through the normal training procedures. And these two groups showed, at the conclusion of training, performance scores not inferior to those who had passed the tests. And I think there is

perhaps a good case for saying that the relevance of selection tests depends on the efficacy of training methods. The better the training methods, the less important it is to have selection tests, the object of which is to exclude people from training.

I would like to have that as the speaker's proposed starting point.

DR. PALLONE: I would like to make one comment, but really to ask Dr. Droege to describe current procedures for determining minimally qualifying scores for MDTA trainees.

As I understand it, we were faced with a peculiar situation locally of having a 95 G score or an ideal 95, qualifying for enrollment.

DR. VITELES: Dr. Pallone, I would like to make a comment.

I am going to rule you out of order. I don't think we ought to get into the discussion of specific scores for selection for a given job. I think we only have an hour and a quarter in which to discuss the basic principles. We ought to devote ourselves to that.

DR. PALLONE: Let me rephrase it, then.

As I understand the process, it is quite possible for certain selection scores to be established on statistical grounds in the State of Indiana and other scores to obtain in Illinois and still other scores to obtain in California for the same occupation. And I would like to pass it along to Dr. Droege now and ask him to describe that process.

MR. DROEGE: We have 36 State Employment Services that get special funds for test research to do just this kind of thing, to develop aptitude test norms for specific occupations and MDTA training courses.

Now, if Indiana does a study on a particular occupation -- let's say machine operator -- it does research in accordance with the procedures that we have developed for these studies and sends in the data to us in the National Office. And, let's say, Illinois does another study on the same occupation. We take a look at both studies, and we see to what extent we can develop a set of test norms on one sample that will cross-validate on the other. In some cases, this is possible; in other cases it is not. When it is not possible, what we do is to see whether we can come up with a single test battery, based on data from the two samples, to give us a good prediction on both samples. We can't claim any cross-validation here. In some cases a State will make a case that, because a test battery was developed in a particular plant or training course, that test battery should be used in that location rather than a test battery based on data from different locations. This is based on the concept of the norms being more valid in the location where they were developed than in other locations.

DR. VITELES: In other words, there can be differences among local norms with

respect to predictability of the test. Is that it?

MR. DROEGE: Right.

DR. VITELES: Based in part possibly upon local differences in the construction and the organization of the trade and the operation?

MR. DROEGE: Right.

DR. PALLONE: Or just the occupation structure.

DR. ELVIN RASOF (Curriculum Consultant, MDTA, Detroit Public Schools and Wayne State University, Detroit, Mich.): We are one of the large MDTA basic multi-occupational programs. Have you gentlemen heard of "basic education" and the fact there is no threshold that one must pass to get into an MDTA program this way? That you can take in people who don't reach these particular levels? In fact, 20 per cent of our population are complete illiterates. (And this doesn't mean computer operators.) But, Mr. Chairman, I walked in a little late so I might have missed something when you were drawing your guidelines. I am a little disturbed when we speak in the same breath about the community college and the 30,000 people we determined are illiterates in Detroit. Community college -- this is another world altogether.

DR. VITELES: This is 30 per cent of your older workers who need retraining?

MR. RASOF: Thirty thousand in Detroit are considered hard-core unemployed. We trained 1100 last year. Of this 1100, 37 per cent were over 45. This will be part of my presentation tomorrow, and I don't want to give it all away. But I would like to tell you we had some success with basic education leading into the MDTA program, (what is called the multioccupation basic education combination). And I would like to say we have found that these people do do very good work.

We have developed a job-seeking clinic within our program. We take the man before he is ready to leave, even if he already has a job, and try to sharpen up for example the test taking skills. It doesn't mean we give him tests day after day, but try to give him some kind of testing to prepare him for the outside world.

And I would like to make a recommendation that there are some job-seeking skills that can be sharpened in almost every project.

DR. VITELES: You are suggesting, then, that one practical recommendation might be that steps be taken to sharpen up the job-seeking skills which include the sharpening up of the capacity to take --

MR. RASOF: -- a test. Some of these people have never taken a test. And, incidentally, this should be close to the end of the course, not at the beginning.

DR. VITELES: All right.

MR. WILLIAM TASH: (Project Director, OMPER Follow-up Studies, Catholic University, Washington, D.C.): The staff at the Bureau of Social Research, Catholic University, are engaged in some follow-up studies for the U.S. Labor Department in Washington, D.C. on five or six E & D projects. I would suggest that rather than eliminating research procedures, we attempt to do more research. It might prove promising to correlate the results from non-verbal tests, as suggested by Dr. Carl, with the standard GATB test. We could then compare an older person's score in the non-verbal test with his score on the GATB verbal test. More effort is needed to correlate the two -- the non-verbal with verbal -- as a means to help the older person.

DR. VITELES: Any further comments?

Let us keep to this one topic, the implied recommendation that Mr. Belbin has made, on the chance we will come out with something concrete and constructive here.

DR. CARL: One comment on the community college. It depends on your definition of what is included in a community college. It can be very diverse. And perhaps we are a little more diverse.

MR. RASOF: You mentioned MDTA. And this is separate.

For example, I didn't get the exact figure -- it seemed to be a large figure Professor Fahey mentioned.

I would like to know two things:

One, how do you know if the job a man gets is related to his training or not?

Two, how can one define a related versus a non-related job?

I would also like to know the figures of these related jobs for MDTA people.

I would like to know if this data is available. And, if not, why isn't it available because this is pretty important.

What is the most important thing -- to get this man out working or to get him on a related job?

And, also, let me say that we in our program had a two-week trial basis where the people could try out different areas. We found that many of our illiterate trainees who came in would sit near some man who might say, "I am going to sign up for cooking." So this guy signed up for cooking. And there were little clusters such as this. We have found it is better to counsel a trainee into an area than have him come in and spend two weeks

here and two weeks there and get completely muddied up.

DR. VITELES: Yes, sir.

DR. FAHEY: I think that we are all on the same general track. And the problem is definitely that the older worker is discriminated against.

I have data from South Bend on a general survey and a specific survey of older workers in training, and these workers in training are of significantly higher educational attainment than those who are not in training. So obviously those who are not in training, who are unemployed to a greater extent than are this better educated group, don't get into it.

I think that the speech we had this morning by Mr. Belbin in regard to changing our methods of training may be very important; that too often these training programs rely on verbal skills. Time after time, I had workers who were actually in these training programs say the training course was fine, but the book work was terrible. They hated the idea of going into books. And I think that those who have low verbal attainment should be perhaps put in courses in which the verbal factor is not too important and more emphasis is given to non-textbook type of teaching; and that we can take these functional illiterates and put them into a training program where they can get something worthwhile out of it.

DR. VITELES: Any further comments?

MR. SEILER: I was in the GATB program for seven years, and developing GATB norms was my primary function, I think that everybody should know that a set of norms developed in one State on a sample of 50 people is used throughout the country. In most cases, people who are successful on a job are arbitrarily dichotomized into high and low success groups. As far as cross-validation is concerned, at least, conservatively, 80 per cent of the norms are not cross-validated. I think that it should be a recommendation of the conference that some change be made in the kind and size of samples that are available before a set of norms is used throughout the country. I would hope that we could come out with some sort of recommendation with respect to norms.

With respect to the question, do these norms work against the older person, I think that we need research to prove that they do work against the older person. Nobody has presented anything today which has proven that point.

If we get off into a discussion on making job placements, we can talk forever and get away from our topic today.

I am assuming that Dr. Carl has experienced a very low dropout rate. Now, if he has a low dropout rate, I again assume that it means that his students have the abilities to learn the occupations that they are training in. And if they do have the necessary abilities,

I would like to know what the key elements are in selecting these students.

A student may try different work-samples and decide that he would like to take training in a certain occupation. However, Dr. Carl's psychologist and other people make the final determination. Question to Dr. Carl: Do you know whether or not the applicants actually meet certain GATB norms or other norms before you take them into your training? If you don't and if you haven't even explored this area, maybe you can get together with the Employment Service and do some meaningful research.

DR. CARL: To answer you, let me take one person.

First, we don't follow the GATB scores. Our psychologists do not believe in them per se. We have developed our own because we could not find in certain areas good tests to measure what we needed to test.

Here I have a miner, 49 years of age, with a fourth-grade education, married with two dependents. He has a cardiac condition. The Beta I.Q. is 98 which gives him a 40 percentile. Bennett Mechanical Comprehension 29, 15 percentile. Minnesota Paper Form Board, 8; Tool Score 53, slightly above average; Dexterity looks like 16; Minimal clerical, number 63, which would be 7th percentile. Clerical Names, 40, second percentile. WTI-math -- and here is where we could not find an acceptable test, we had to develop our own math test -- he ranked 4, or second percentile.

He wears glasses. His visual distance, both eyes, 20 over 33. Right, 20 over 40. Left, 20 over 33. Nearsighted, 13 over 17. Right eye, 13 over 17. Left eye, 13 over 26. Clear fair depth, zero.

Job trials, electric motor winding seven days. He took four. And then he went back later for three more days. Sign painting one day, carpentry one day, office machine servicing of typewriters two days.

He wound up in electric motor winding and repair. I didn't see anything in these tests which indicated that electric motor winding and repair was the thing this young man should have gotten into in the first place. It clearly developed from job trials from the areas where the tests indicated to us that he had the basic minimal aptitude to succeed in that kind of work, with the dexterity and the tool dexterity and so forth.

Naturally, he could read and write. He wasn't down this far.

We accept any applicant that anybody sends to us -- the State Bureau of Rehabilitation and others -- and try to work from there.

DR. BELBIN: I am very interested in Dr. Carl's point which I think is a very significant one. And it closely parallels our own experiences in England.

We have got a certain project, currently in operation, for research in the problems of industrial retraining. And we found such remarkably poor correlations between performance on many selection tests, that seemed logically related to particular jobs, and ultimate job performance after training that we had to rethink the whole problem of selection afresh. Reviewing the overall results, we have found that a better predictor of ultimate success was good performance at a very early stage, during training for the specific job.

And, therefore, what we have done is develop a hypothesis that the important thing in selection procedures is not to measure performance on a particular selection test which, after all, is only going to give a measure of attainment and ability at that specific point in time, but to measure learning ability over a short period of time on a particular task in which the individual has no previous experience.

We, therefore, have a project which is taking place at the present time in the government training centers whereby learning tests, related to the job the person is ultimately to perform, are being applied as selection procedures, with a view to seeing if these give better predictive value than selection tests themselves.

I am reluctant to comment prematurely on what the results of this are going to be. But my impression is that a measure of learning ability in these situations looks as though it is going to be more promising than the more static picture of performance that emerges from the application of selection tests.

DR. VITELES: I am going to try to draw these threads together as we go along.

It seems to me that what we can agree upon now, without getting into too long an argument on the usefulness of tests, is that this group would discourage the use of tests in selecting older people for training which had not been thoroughly validated and cross-validated, both with respect to predictability and cutting scores, with a sample chosen from the population that is under consideration, that is, with whom we have to deal.

DR. CARL: I don't know as I would exactly agree with that.

DR. VITELES: Let me just elaborate on this a bit.

I suspect that I can cite just as much evidence with respect to the usefulness and long-range predictability of tests as you can cite negative evidence -- possibly more -- because I have been in this field 45 years. And I believe that I can cite more evidence than you can on the numerous instances in which tests have been misused, because of the failure to cross-validate both the tests and the cutting scores against a respectable criterion and on an appropriate population sample. But the fact that this happens does not mean, in my opinion, that we should discard tests where they can be useful and where, indeed, perhaps the training as a predictor for selection may not prove useful for two reasons: One, because of the length of the training program required to determine future work adjustment

is too long. Two, because of the number of times in which it has been shown that even early training on a task is not necessarily a predictor of later performance on a task.

However, I think I would be inclined, along with this first recommendation, to suggest another -- and then I think we will be ready to hear from Dr. Carl again -- namely, that more attention be paid to the possibility of a good, sound long-enough training experience as a basis for selecting people for training.

In spite of my frequent and quite successful use of tests in many instances, I still contend that the best predictor of future performance is the past behavior of the individual. The only reason we can't use this fully is because we do not have enough opportunities to observe the individual under standard conditions for a long enough time. And we do not even have the techniques for recording such observations.

But a training program on the job itself provides an ideal situation for observing the behavior of the individual and, from that, predicting future success on the job. And there is a considerable amount of experience, including my own experience in transferring people from gas plants to electric plants, in selecting and training programmers in the modern situation, that indicates there is a good deal of merit in this as one of the many approaches that can be taken toward selection for the training of older workers.

DR. CARL: I would essentially agree with you. However, I think that I would not want to stop the use of tests until such time as we validate this thing all the way across the board, because we need every assistance we can get to help us in helping the individual get to what he wants to do. And even though at times we feel the tests are quite poor indicators, if a boy can come up with an 85 percentile in the Minnesota Paper Form Board, this does tell us something. And we would want to use it. Whether or not we fully validate it, the reliability of this particular situation, I wouldn't worry about this at this time. I still want to use the tests that we have today.

I agree with you we should carry on further research to know where we are going in it

DR. FAHEY: One problem bothers me -- I am not a tester, and I don't really understand too much about it so you can excuse my ignorance, and I see where they would be very useful in putting an individual into a particular type of training program -- but I think the big problem we face here with the older worker is getting a person into a training program. I think all these people should have an equal opportunity to get into a training program and that this selectivity should not be according to tests. And after you have determined whether or not they are eligible for teaching, by whatever criteria you use, then you will set up particular kinds of training courses to cover the wide range of abilities that you have.

Certainly, you couldn't put an illiterate in a class that requires reading. But he should have something that he can go into. And it shouldn't have to be Basic Education. Many a 55-year-old man or woman is highly insulted that they have lived all this time

without reading and they don't know why they have to read now. But is there something that they can be trained for? And I think that is the main problem.

DR. VITELES: Could you rephrase that in terms of a recommendation that we might make?

DR. FAHEY: I would recommend that older workers be accepted for training without regard to test scores. Test scores would only apply where we are putting them in a particular training course.

MR. SEILER: What kind of training are you talking about? All the training is specific occupational training.

DR. FAHEY: I think training is functionally good for much different reasons than you do. I think it is good for its own sake, whether the person does what he is trained for or not, which I think most of you would not agree to. And I give my reasons for that tomorrow.

MR. DROEGE: I would like to come back to Dr. Carl's comment and Dr. Viteles' points about the cross-validation.

It seems to me that although cross-validation is certainly an ideal that we should shoot for, to require it before the tests are used operationally -- and I don't mean necessarily in straight selection; I mean counseling too -- is not entirely realistic. We don't require cross-validation of other information about the individual for determing whether he would meet the qualifications for a particular training course or job. We use what information we think is relevant based on whatever research has been done.

I think cross-validation is good, and we ought to do as much as we can to get this kind of evidence. But to insist that it be obtained, I think is not realistic.

DR. VITELES: I just want to say one word on that, but we will have to have a vote on these issues before we go. I was a member of the original board that set up the Occupational Analysis Section of the U.S. Employment Service. My great fight all along with that board and the people who followed in the Employment Service was the failure to take the time to do the cross-validation. And we are paying for this failure right now because we have instruments, and we do not know the real worth of these instruments in particular situations.

So if the group as a whole votes against this cross-validation, I want to go on record as still saying this is absolutely required.

Go ahead.

DR. PALLONE: I just wanted to comment on Dr. Fahey's and Dr. Droege's statements.

This isn't applicable necessarily only to the use of the GATB or any other aptitude battery with an older worker population, but I think with any population. I think one of the difficulties has been that in only rare instances are the critical aptitudes necessary for success in a specific occupation, as opposed to the general aptitudes necessary for general occupational success, the ability to apply the procedure in doing whatever task is under consideration, not a specific task, but any task.

It seems to me that when there are areas of overlap, such that there is a range of acceptability, verbal ability, among screw machine operators and refrigeration mechanics, then we have not yet parceled out or factored out the critical aptitudes that are necessary for success in those two occupations.

And I think that this is one area that we have to go into in test development, to make tests more appropriate as selection devices across the board, let alone for older workers.

MR. TASH: I propose a recommendation along the lines of action.

If we de-emphasize testing, and place more emphasis on a person's past behavior, there is a greater need for selecting highly qualified vocational counsellors.

I recall that two projects we evaluated standarized tests were not used. But the people who were employed as counselors were not qualified to make good subjective counseling appraisals. They had little past experience. Unquestionably it is difficult to get people who are qualified to make this type of appraisal. We were convinced that a test even if not completely adequate, was still better than what such counselors were able to accomplish.

So I would suggest that if we de-emphasize a standardized test, there should be a greater urgency to see that qualified people are employed for this assessment process.

DR. VITELES: Any comments, further discussion of this idea?

MR. PARKER ROBINSON: (Chief Supervisor, Massachusetts Division of Employment Security):

I couldn't agree more with what Mr. Tash said. And I intended to bring that point up.

I think most of the Employment Service agencies throughout the country, and I believe Mr. Maughan would support me in this, because of the tremendous challenges we have had in the past few years with all of these programs under the Great Society, lack a sufficient number of professionally trained persons who have the judgment of persons such as a couple of our distinguished panel members.

Oftentimes, a person who is personally responsible at the local Employment Service

office for the selection of a candidate for MDTA, -- whether he be an older worker or a youth -- may have only been on that position less than a year. He may have only been in the agency less than a year. And even those who have had a considerable length of service with an agency may not have had the particular type of experience and training to fully qualify them for the judgment necessary to select the properly qualified person. And I certainly would oppose the abandonment of tests at this time unless we are absolutely sure we could secure a sufficient number of highly trained, competent people at the local level for this position.

MR. VITELES: May I make a comment on this?

There has been a kind of renaissance of interest in the literature in interviewing and in the validity and reliability of the interview. More and more articles are appearing on this issue. And they again show that the extent of agreement among independent observers in the assessment of an individual is frequently small. But here the U.S. Employment Service demonstrated many years ago, in the case of training job analysts, that by properly designing the training program, you could come out with a corps of job analysts who would come up with pretty much the same evaluation of the job, with the same ratings on the various characteristics. And I think that it is very well that at this point we have recognized the need for consistent training of anybody who is going to be involved in the selection process, in order to achieve maximum results in the use of the interview. That might well be one of the principles that we formulate here.

I cut you off, Dr. Belbin.

DR. BELBIN: I am frightened that we are going to conclude that we should abandon our selection tests. I don't think I have heard anybody propose this. I certainly haven't proposed it myself. All I have done is draw attention to the fact that many selection tests that appear to logically relate to job performance, in fact, when we consider their results against ultimate job performance, give disappointing correlations.

What I would, therefore, like to propose with regard to this is not that selection tests be abandoned, not at all, because we want to develop our knowledge about selection tests -- this is one of the objects of the endeavor -- but that selection should be used to guide placement as between different training courses as far as possible, and that we should not think of selection tests as the agency for excluding people from training altogether.

I think this is the point that Professor Fahey was bringing out. I think it is in practice the significant point, as far as the application of this GATB test is conderned in the general employment field.

In fact, I think we should exclude tests from training courses altogether, where

they are used as the basis for exclusion unless they have been validated.

DR. VITELES: And cross-validated.

DR. BELBIN: Cross-validated.

DR. VITELES: Any further?

MR. JOHN KOENIG: (Director, Manpower Training, State Department of Education, Tenton, N. J.): I agree with the statements that have been made so far. I am in agreement that we shouldn't abandon the tests, obviously, and that we should work toward the cross-validation of the tests. But I concur with the gentleman from South Bend in that if we use the test, and tests can be used as a discriminating factor, some of the older people may not even be admitted to the program. This I think, is one of the serious problems here.

In New Jersey we are moving toward multi-skills centers, very similar to many that have been set up in the country. We have three in operation, two more to open soon and two more in development. We will have seven or eight skills centers, hoping that we can cope with what you are talking about.

We have an agreement worked out now with the Employment Service whereby referals come in unclassified. They have not been given tests -- in certain cases, not even at the Employment Center -- for the simple reason that some of these people have never taken a test. If the trainee is a youth, some have vivid memories of recent tests flunked in school. Many are scared of tests. This factor alone would invalidate the tests to start with.

We do not give tests to the trainee the first day he or she arrives at the Skills Center, nor do we start them in Basic Education the first day. Trainees are permitted to survey the operations that are available. Very similar, apparently, to what Dr. Carl suggested, to stir up an interest.

All of our jobs are set up in clusters, such as clerical skills, and food services as opposed to cook, typist, or file clerk, classifications.

For example -- clerical skills. Everyone starts as a file clerk, because even if they are going to be a stenographer, they should know something about filing. From this point, everyone progresses at his own rate. Trainees in the same class will be graduated as file clerks, some as clerk typists, others as stenographers. Abilities deterime occupational attainment within the clerical skills cluster.

I think the other point, as far as action goes in all of these skills that we are setting up, is that we have advisory committees from industry for each occupation. For instance, take our short program for bank clerks. Personnel from banking industry

advise us on the curriculum. They also talk to our students. Nothing seems to motivate our students more than having employers come in and say, "We have X number of openings for bank clerks."

They also talk about the importance of personal grooming, personal adjustment, and punctuality. I would like to recommend that we not rule the tests out, getting back to tests, but at the same time, I don't think it should be the all-important determining factor as to whether a trainee he should be admitted into the program in the first place.

MR. DROEGE: Let me just make a comment in clarification as to what the Employment Service policy is on use of tests with the disadvantaged, and the difference between policy and practice. The recommended procedure here is that if the person is considered disadvantaged in any way, he is referred to a counselor who looks at this individual, not from the point of view of screening him in or out of a training course, but from the point of view of considering what are the alternatives for this individual. A number of training courses may be available. There may be a possibility for direct placement. All of these should be considered. With regard to the use of aptitude tests, the idea is that, if the individual does not have the basic literacy skills to take tests that require such skills, he is not to be tested with these but only with tests not requiring literacy skills.

Now, the practice is not always in line with policy -- leading to the criticism we hear discussed now, that the tests are, in fact, in many instances used for screening in or out of a particular training course.

DR. VITELES: Yes.

MR. MILTON ROSENBERG: (Director of Employment, New York State Commission for Human Rights, New York City): There is one point I haven't heard mentioned at all. The entire emphasis is on manpower training programs under some form of government supervision or assistance.

Now, what I am concerned with is: what about the point that present practices militating against the older worker may include the fact that there is a specific age barrier before you are even eligible for consideration for a training program in private industry, at least, and even in some governmental situations? Take the building construction industry where the apprenticeship rules are very clear, 17 to 26; take other situations where private industry will say, "We are considering people only up to age 28," for a certain training program. And these are not only those training programs where there is a three, - four - or five-year period, but even training programs of a year or two.

That's the first part of my question. What is being done in connection with answering the question as to how valid are the specific age barriers set forth without reference to anything except your eligibility to come in and be considered?

As I understand your comments this morning, Doctor, you suggested there were some areas in which learning ability stopped even as early as 18 or 19. And so, in the 20's, there was a clear diminution of ability.

I don't know who would answer that question for me. I assume Dr. Droege or the moderator.

DR. CARL: May I comment? In 1945, we started a course in heavy construction equipment, operation and maintenance. Boys, to get jobs, had to go non-union -- work non-union for a couple of years, and then they could join the union. It depends on what we are talking about. The communities and the labor programs vary. We have a lot of non-union construction in our area. In other larger cities, of course, they would be pretty well tightened down to strictly union situations.

I have had large typewriter companies and office appliance equipment companies say, "Give us anybody up to 55 years of age. We would like to have them by 55 because, then, with ten years with us, they can come out at least with a fair partial retirement situation. Above that, we can't very well have them come out with such a retirement." I don't think we have too many problems in this respect. There are some, and we have to work around them just as when we train a wheelchair case in drafting. We have to look for that particular plant that has a drafting room on the first floor so that we can put a little ramp to get up the one step to get the draftsman to work. Whereas, if the drafting room is on the third floor and no elevator, we certainly can't put that draftsman to work in that plant.

MR. ROSENBERG: That isn't my question. My question specifically is: Is there any validity to a specific age barrier to the acceptance for consideration of an applicant for a training program and, if so, what research is being done on this subject?

I am not talking about bona fide occupational qualifications, where a man can't do it, or a five-year training program for a man who is aged 60. I am talking about the flat statement by a private industry that if you want to apply for a particular job which involves a preliminary on-the-job training program or an in-service training program or a building construction apprenticeship program, you may not be over age so and so. And I think you all know what I am talking about. Now, is there any research which says yes or no to the validity of that particular criterion?

MR. DROEGE: Well, for one thing, there have been some surveys by the National Association of Manufacturers and others asking employers what per cent of the people aged 45 and older are satisfactory as opposed to the per cent below that age, this sort of thing. This is pretty subjective, doesn't really get down to the problem, and it generally doesn't get down to specific jobs. But there have been some studies by the Bureau of Labor Statistics, using productivity indices, where they go into a plant and relate productivity to age. One shoe manufacturing plant, where there was a wide distribution of age among the employees was studied in this way. And there have been a number of others.

The trouble with studies of this kind is that they are cross-sectional in nature. They get whoever happens to be in the plant. There are reasons why such samples might not be the kind you need to make valid conclusions. One, perhaps the most basic, is that a number of people have been promoted because they are very good workers, and others, who have not been successful, have been fired or have gone into other kinds of work, leaving a group that cannot be defined well. What you need in this area are longitudinal type studies where individuals in a wide age range are hired without any regard to age or test performance, and then followed up to get indexes of productivity or taining success and then relate age to these indices. But it is very difficult to get data of these kind and I know of very few studies of this type that have been done.

DR. VITELES: May I say a word on that?

The whole matter of studying age effects is very, very complicated largely because of cultural factors which affect the performance of the aged. But throughout the years, starting with Thorndike's studies in the '30's, the Welford studies and even the facts that were brought before us today tend to indicate that the loss of capacity with age, the loss of sheer capacity, is not as great as people are led to believe. What happens is that there is *change or loss in motivation; there is a change* in learning set: there is a loss of the habit of continuing to learn, which grossly affects the learning of older people. But such losses as occur are of a nature which, in my opinion, can be overcome by the development of motivational devices, by the development of techniques for restoring learning set, and by doing many of these other things that can be done to overcome that lowering of ability which is not due to some inherent deterioration in the individual.

Now, I think industry is aware of this. And I am convinced that industry's refusal to hire older people is not primarily motivated by a belief that the older person is not capable of learning, especially if the industry is willing to spend a little more time on the training. But it is most frequently an expression of the pension problem, of the need for providing a pension under conditions that make it impossible to do so.

Now, to discuss this involves a consideration of economic and many other factors which I don't think it is our privilege to discuss. But I think there can be a clear separation. I think this can be identified as at least one of the major factor in industry's antagonism toward the hiring of older people.

And at least I am prepared to say, with a great deal of confidence, that there is much more learning capacity in older people than we have used in the past. And perhaps one of the best illustrations is a series of studies made during the depression when it turned out that the production of older people started to rise and continued to rise to the point where it was above that of middle-aged -- and even younger -- people, one reason for this being that they saw themselves as more subject to firing at an earlier date unless this was accomplished.

Now, what the costs were in the way of accelerated physiological change, we don't

know. I suspect they weren't serious physiological costs. But, nevertheless, from my point of view, what evidence we have on the effects of loss of learning ability, loss of capacity, etc., indicates that this is not the basic problem at age 40 or 45.

MR. ROSENBERG: You see, Doctor, you have dropped the age limit in your definition of the frame of reference. We should discuss to 35 for women.

DR. VITELES: I am willing to settle for age 45 for men. As stated earlier, problems are of a somewhat different nature in the case of women.

MR. ROSENBERG: So we are not talking, really, about older aging people. We are talking about a strictly middle-aged group now which is a different frame.

DR. VITELES: I think the situation for women is different. They are mostly in the office jobs. And there the prejudice takes the form of a sheer desire to have younger people around. I am afraid this is the case. And, in fact, if I may say this off the record.

(Discussion off the record.)

DR. CARL: I think the law of supply and demand in our economic system and where we are has an awful lot to do with this at this particular point.

Now, we don't have the problems of the placement of the older worker that we had a few years ago. This varies according to economic conditions in the country and the occupational area we are talking about.

MR. RASOF: In our particular city, we have for example the Negro woman aged 35 whom no one wants. There is no place to train her, really. Sewing, furniture upholstery, automobile upholstery and things like this. You can't get these people clerical jobs for they are people operating at third- and fourth-grade level. This one case is a very great "sore" in MDTA training.

In fact, I wish we could focus just upon this one segment of the population. We would like to see funds set aside just to focus on segments such as this one.

And remember, this woman also has family of some kind to support.

And if you look through the papers, you see there are many ads for domestic. We say, "Let's not put them into domestic." And yet there is an area where people want to hire this group. We say, "Don't go there."

MR. ROSENBERG: There is another point before you sum up which bothers me in connection with the principles which we are now considering.

First, there seems to be quite complete agreement that we should have as much

validation as possible. What I want to know is what you do in the process in the period of time which elapses from the time that you are experiementing, on verbal tests, for example, and the time you validate them.

I mean, what we are faced with in the large urban centers such as Detroit and New York City is the problem of moving very large groups of people, who do not have the capacity to take verbal tests, into training and then to jobs.

And what occurs at a community college, I would agree, however defined, means that you at least have a certain degree of literacy and have certain verbal and arithmetic skills.

So that the question which I think must be included among the recommendations of this panel is what you are going to do in the interim between the development or experimentation with new tests and their validation and cross-validation and what do you do with people who at this point are non-test-takers in the sense of their ability to face up to any kind of a test.

And I would certainly suggest that that be considered in the final results of the panel's recommendations today; that this question not be left unaswered.

I don't propose to answer it except on the basis of accepting a certain number of unclassified people and using Dr. Droege's empirical suggestion that you just don't wait until you validate everything and find out how it works in practice in the interim.

PROFESSOR RAMONA FIRST (Professor of Economics, San Francisco State College, San Francisco, California): We are working to serve persons 60 years of age and over. I would like to suggest that one of the guides to training would have to be past work history, as was mentioned briefly earlier. This is the only guide we have for our group, and we think it is going to be useful.

DR. VITELES: And this is more frequently available in the case of individuals 45 years of age and over than in the case of a younger population with whom we are concerned in another context.

PROFESSOR FIRST: We feel that the current Employment Service interview is not long enough or detailed enough to bring out the picture of the person's past attachment to his job and the ability to grow in it which might be a clue to training potential.

DR. VITELES: I wonder whether I could point up this discussion just through the use of four concepts that have been recently introduced in the consideration of decision-making on personnel selection.

There are the concepts of fidelity and width, taken, of course, from the electronic

industry. You can emphasize fidelity or width, and it is very difficult to get both together. And this is one of the distinctions between AM and FM broadcasting.

Then, we have utility and cost.

Now, the advantage of a well-validated selection battery is that you have high fidelity. You get high utility at low cost.

MR. RASOF: Where is the width? Is that without any width?

DR. VITELES: Let me talk about width a moment.

In the extension of width, you get some return. Take the interview which includes some discussion of the biographical background of the individual. We don't have many objective findings that support the use of this kind of device in terms of fidelity. But the sum of experience has been that something comes out of these interviews -- some width is added to our bases of assessment. But the cost is high in two respects. It is a more costly method of assessment. And there is a higher cost to the industry and probably to society at large because of the mistakes that are made.

Now, it seems to me if we wanted to summarize in one broad statement what has been said here, it is that for practical reasons, especially in the absence of techniques that have high fidelity in the assessment of certain characteristics, we must continue to use devices which are wide in the sense of not producing good prediction. We recognize that the cost is high and that we may even have to go so far as to ask industry as well as government to bear some of this cost in terms of trying out some people whom they wouldn't otherwise have tried out.

But, nevertheless, we are also saying, I think, that we must do the research that is required to produce instruments and techniques of all kinds with high fidelity since these are the ones that will give the best results from the point of view of industry, from the point of view of the community, from the point of view of the individual himself.

Is that a fair summation of points of view that have been expressed here?

All right. We have ten more minutes.

Do you want to consider these recommendations one by one and vote on them, or do you want to continue with the discussion?

All right, let's see whether I can phrase, in probably a biased way, the recommendations which seem to grow out of this discussion.

One is that the use of tests should not be discontinued, but that the weaknesses should be fully recognized.

Will you accept that?

(There was general agreement.)

Secondly, from the point of view of the long-range program that every effort be made to assure the highest degree of validation and cross-validation of tests, including predictabilyt and cutting scores, too, as a prerequisite for their intensive use.

Will you accept that?

(There was general agreement.)

The third is to recognize the potential of a training period as an alternative and in some instances even a better predictor of success in the occupation than tests themselves and that the use of such device, although costly, is necessitated by the present situation.

Any objection to that?

(No objection.)

The fourth recommendation which I seem to hear, and I thought this was a good one, although it wasn't discussed at length, was that in dealing with these older people, we take a kind of a job family approach. This concept of job family, a multi-job approach, an area of job which was, of course, developed again in the U.S. Employment Service program, as a way of kind of selecting for each individual the level at which he can best serve thereby providing an opportunity to place low-level people at low-level jobs, moving the higher level people up to higher level jobs.

Does this kind of say what you want to say and what you were saying?

DR. BELBIN: Yes.

MR. SEILER: How do tests enter that?

DR. VITELES: This can be done either through testing or training, or both.

Actually, the General Aptitude Test Battery in theory attempts to do this. It attempts to set levels. And it also to some extent can take care of the compensation factor, because using a total score on a differential aptitude test, an individual can score very low in certain parts of the battery and still get a satisfactory passing score by scoring higher in other parts of the battery.

This is one of the very significant features of the multi-aptitude test battery, although the shame of the thing is that it tends to reduce the predictability of the finding. And this is one of the difficulties that the psychologists have not yet overcome.

MR. SEILER: But the current procedure is the multiple cutoff score approach where it can't compensate.

DR. VITELES: That's right. It is a hurdle procedure.

MR. SEILER: Right.

DR. VITELES: And this is wrong. This is why I accept this recommendation. I think we have made more mistakes by using the hurdle approach, the multiple cutoff score, than we can possibly excuse ourselves for making because the individual who is high in general intelligence, but low in mechanical comprehension, may be able to handle a job in spite of the fact that he fails to meet a single passing score on the mechanical comprehension test. And this is why the compensation factor works and in my opinion has not been sufficiently used.

However, I don't know whether that's for the recommendation or just for the record.

Finally, it seemed to me I heard one more recommendation that was not pressed to any degree, but that more research be done with non-verbal culture-fair tests as a substitute for tests presumably highly loaded with specific cultural factors. Do you want to include that as a recommendation?

We probably ought to discuss that.

In the work that I have done, for example, I find a correlation of .80 between the Otis verbal and a test touted as a culture-fair test. Such findings have been duplicated elsewhere. So the problem is even broader than is apparent on the surface. But it seems to me we should at least do the research that is required toward developing tests which are as culture-fair as possible.

DR. PALLONE: Isn't that a matter of interpretation relative to the population studied?

DR. VITELES: There are many factors involved here. I think those of you who are interested in this problem -- the whole problem of tests -- might well read an article written by Philip Vernon on ability factors and environmental influences, which was recently published in the American Psychologist. There is another little pamphlet recently written by Sir Cyril Burt, the very eminent British psychologist, which deals with the same problem. And since the two come out with somewhat differing conclusions, it might be well for you to read both articles if you are interested in an intensive consideration of this problem of whether, indeed, it is possible to develop a culture-fair test.

MR. ROSENBERG: May I ask this indulgence since I come from a Commission which has law enforcement powers, in which some of these ideas may come up in some pending cases? May I be noted for the record simply as abstaining from any opinion on

the recommendations which you have made, since they may come before me, in effect, for recommendation in the case of litigation.

DR. VITELES: Well, all right. But, of course, the fact is that we are not recording these as unanimous recommendations, just recording them as recommendations. I think it would be a mistake to record them as unanimous because I suspect that each one of us has some degree of reservation with respect possibly to every one of these recommendations.

However, if you want to be recorded specifically as abstaining, I think that should be done.

MR. ROSENBERG: Simply because it is a matter of law.

MR. ROBINSON: I would like to make a suggestion that the initial training period which you recommended, Dr. Viteles --

DR. VITELES: Not I, the panel, the group.

MR. ROBINSON: -- Which the group has under consideration also be coupled with a vocational diagnosis of the type that is now used by Dr. Carl in Williamsport. I think this is a very sound thing. I hark back to the early days in Massachusetts when we initiated our ARA program and went rapidly into training, only to find out, I think, that 20 per cent of the initial trainees failed to pass the physical examination which made them acceptable to employers.

DR. VITELES: I wonder, Dr. Carl, whether you might not want to initiate a recommendation to the effect that there be a greater consideration of an individually oriented approach as contrasted with the job-oriented approach in the placement of workers for training.

DR. CARL: I would certainly concur in this recommendation that we should have something more generally designed towards the particular individual rather than the job-oriented type of situation. I think this has been the feeling nationally with the MDTA.

I was in the American Vocational Association meeting in Miami the first of December, and part of the training problem being discussed there was that they were finding poor results under MDTA because of the job orientation. And I would heartily agree and recommend that we include this in our policy recommendations; that we establish, as best we can in our respective communities and areas, a more personal-oriented type of counseling and guidance toward occupations for the particular individual.

DR. VITELES: Any serious disagreement with this?

(No response.)

Well, we are about at the closing hour. As chairman, I want first of all to apologize for having talked too much, and secondly, to thank you all for your participation and to congratulate you upon what has resulted from it. I think this will furnish the basis for very useful guidance for those who are working in this field.

Thank you again.

We are adjourned.

(Whereupon, at 4:55 o'clock p.m., the meeting adjourned.)

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